

**Abstract**

A network monitoring and analysis system is configured to include a root cause analysis function that permits the automatic determination of performance problem locations in a network of a communication system comprising a plurality of endpoint devices. Test communications are generated in the system in accordance with a selected pattern, which may be based on a flow matrix, and end-to-end path measurement data is collected utilizing the generated test communications. The end-to-end path measurement data is transformed to produce a plurality of performance indicators comprising a performance indicator for each of a plurality of non-end-to-end paths defined at least in part by the selected pattern.